

**Background Work Supporting the Evaluation of Feasibility and Initial Design of an Interim Cap for the Aerovox Nearshore Area -
17FEB2017**

Information Requirement		Relevance	A. Scope of Work - Minimal	B. Scope of Work - Expanded
An initial approximation of interim cap performance objectives is key in fully scoping the information requirements 1-11 below.				
1	Physical characterization of the nearshore area including the full width of the waterway	<ul style="list-style-type: none"> - presentation of data - impact of cap placement relative to full waterway 	<ul style="list-style-type: none"> - use existing bathymetry and GIS to create cross sections and calculate areas 	<ul style="list-style-type: none"> - create 3D visualization of waterway and subsurface
2	3D extent of DNAPL beneath the nearshore area	<ul style="list-style-type: none"> - determine the extent of required cap - determine areas with seepage potential 	<ul style="list-style-type: none"> - use existing boring data to create conservative confirmed/probable and potential zones 	<ul style="list-style-type: none"> - collection of additional shallow cores to increase confidence in zone boundaries
3	Groundwater discharge zones and discharge rates in the nearshore area	<ul style="list-style-type: none"> - design parameter for the cap - assessment of potential alteration of groundwater flow field by the cap 	<ul style="list-style-type: none"> - use existing groundwater flow data from the Aerovox Phase 2 and 3 reports for screening level assessment - estimate conservative/"worst-case" potential discharge scenarios to determine if there are significant data gaps 	<ul style="list-style-type: none"> - expand on existing or develop a new Modflow application to evaluate the impact of the cap - field measurement of discharge parameters
4	Flux of dissolved phase contaminants	<ul style="list-style-type: none"> - design parameter for the cap - assess impacts of delayed removal of source 	<ul style="list-style-type: none"> - use existing groundwater data and flux calculation from the Aerovox Phase 2 and Phase 3 reports for screening level assessment 	<ul style="list-style-type: none"> - add transport to the groundwater flow model application to evaluate effectiveness/impact of the cap - field measurement of flux
5	Physical characterization of the ambient sediment	<ul style="list-style-type: none"> - design parameter for the cap 	<ul style="list-style-type: none"> - conservative assumption of sediment properties based on previous experience and data from comparable sites 	<ul style="list-style-type: none"> - sub-bottom profiling - CPT - collection of cores for lab analysis

6	Gas ebullition	- design parameter for the cap	- literature review of cap design and performance at comparable sites - Perform "sensitivity" analysis to assess gas production rates that would be problematic	- enlist support of an ebullition specialist + collection of site specific data
7	Wave and current energy	- design parameter for the cap	- pull summary information from existing reports and hydrodynamic modeling	- boat based measurements - localized hydrodynamic model application
8	Ice impacts	- design parameter for the cap	- literature review of impacts - empirical data from the harbor	- ice scour model application
9	Sea level rise	- design parameter for the cap	- plot expected trends on cross sections - generalize changes to current/wave regime	- modification of hydrodynamic model
10	Construction complexity/impacts	- incorporate into cost estimate - defensibility of remedy	- review of comparable sites	- if cost estimate is high enough, perform limited value engineering study
11	Ecological functionality of completed cap and impact on surrounding area	- design parameter for the cap - defensibility of remedy	- definition of biologically active zone - review of comparable sites - calculation in changes to riverway cross sectional area	- incorporation into updated functions and values assessment

Cap for the Aerovox Nearshore Area - 17FEB2017

Lead(s)		Estimated Schedule	Estimated Level of Effort
Mike Morris + Dan A. Groher			A.
	B.		B.
Mike Morris + Dan A. Groher			A.
	B.		B.
Mike Morris + Dan A. Groher			A.
	B.		B.
Mike Morris + Dan A. Groher			A.
	B.		B.
TBD	A.		A.
	B.		B.

TBD	A. B.	A. B.
-----	----------	----------

Steve Wolf	A. B.	A. B.
------------	----------	----------

Steve Wolf	A. B.	A. B.
------------	----------	----------

Steve Wolf	A. B.	A. B.
------------	----------	----------

TBD	A.	A.
-----	----	----

TBD	A. B.	A. B.
-----	----------	----------